

R E M A R K S

Reconsideration of this application in light of the present amendment and remarks is respectfully requested. In the outstanding office action, claims 1-21 are pending in the application. Claims 1-21 are rejected.

Claims 1-6, 8, 9 and 14-21 were rejected under 35 U.S.C. 103 as being unpatentable over Teitel (U.S. 4,211,537) in view of Appleby (U.S. 5,813,222).

Claims 7 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teitel (U.S. 4,211,537) in view of Appleby (U.S. 5,813,222) as applied to claims 1-6, 8 and 9 above and further in view of Teitel (U.S. 4,302,217).

RESPONSE TO THE OFFICE ACTION

In response to the office action, claims 1,3,7,10,13,14,15,16, and 21 were amended. Claims 2, 4, 5, and 18 were cancelled without prejudice or disclaimer. Claims 6,8,9,11,12,17,19,20 were unchanged.

Claim Rejections - 35 U.S.C. § 103:

Applicant respectfully requests reconsideration of the rejection of Claims 1-6, 8, 9 and 14-21 under 35 U.S.C. 103 as being unpatentable over Teitel (U.S. 4,211,537) in view of Appleby (U.S. 5,813,222) as herein amended.

Independent Claims 1 and 14 have been amended to clarify that the hydrogen recharging system includes “a heat exchanger coupled to the fuel cell hydride storage reservoir, wherein in response to the coupling of the fuel cell hydride storage reservoir to the hydrogen recharging system, the heat exchanger is adapted to: evacuate the fuel cell hydride storage reservoir by applying heat, and enhance the fuel cell hydride storage reservoir’s ability to recharge by removing heat.” Independent Claims 1 and 14 have further been amended to clarify that the stored hydrogen gas is rapidly transferred “upon detection of the heat removal from the fuel cell hydride storage reservoir.”

Applicant respectfully submits that Teitel (U.S. 4,211,537) in view of Appleby (U.S. 5,813,222) does not anticipate the invention recited in amended Claims 1 and 14. Teitel (U.S. 4,211,537) in view of Appleby (U.S. 5,813,222) does not anticipate evacuating a hydride storage reservoir by applying heat, enhancing the transfer efficiency capability of the hydride storage reservoir by then removing heat, and then rapidly transferring stored hydrogen gas to the hydride storage reservoir upon detection of the heat removal. Applicant submits that the Teitel patent actually teaches away from the present invention since in Teitel there is no attempt or intention to heat the reservoir for the purpose of evacuation. In contrast, Teitel teaches heating to increase the release of hydrogen.

Applicant respectfully requests reconsideration of the rejection of claims 3, 6, 8, and 9 under 35 U.S.C. 103(a) as being unpatentable over Teitel (U.S. 4,211,537) in view of Appleby (U.S. 5,813,222). Applicants submit that claims 3, 6, 8, and 9 are allowable over the cited references based on their dependencies upon amended claims 1 which claim was shown to be allowable above. In addition, Applicants submit that claims 3, 6, 8, and 9 are independently

patentable because they include limitations not taught or suggested by the cited references. Therefore, since claims 3, 6, 8, and 9 introduce additional subject matter that, particularly when considered in the context of the recitations of amended claim 1, constitutes patentable subject matter, Applicants respectfully submit that claims 3, 6, 8, and 9 are in proper condition for allowance and request that claims 3, 6, 8, and 9 may now be passed to allowance.

Independent Claim 15 has been amended to clarify the steps of the claimed method including: "evacuating a connected hydride storage container by applying heat; cooling the connected hydride storage container to enhance the efficiency of transfer of the stored hydrogen gas from the accumulator to the connected hydride storage container; and rapidly transferring the stored hydrogen gas from the accumulator to the connected hydride storage container."

Applicant respectfully submits that Teitel (U.S. 4,211,537) in view of Appleby (U.S. 5,813,222) does not anticipate the invention recited in amended Claim 15. Teitel (U.S. 4,211,537) in view of Appleby (U.S. 5,813,222) does not anticipate evacuating a hydride storage reservoir by applying heat, cooling the hydride storage reservoir to enhance transfer efficiency, and then rapidly transferring stored hydrogen gas to the hydride storage reservoir. Applicant submits that the Teitel patent actually teaches away from the present invention since in Teitel there is no attempt or intention to heat the reservoir for the purpose of evacuation. In contrast, Teitel teaches heating to increase the release of hydrogen.

Applicant respectfully requests reconsideration of the rejection of claims 16, 17, 19, and 20 under 35 U.S.C. 103(a) as being unpatentable over Teitel (U.S. 4,211,537) in view of Appleby (U.S. 5,813,222). Applicants submit that claims 16, 17, 19, and 20 are allowable over the cited references based on their dependencies upon amended claim 15 which claim was shown to be allowable above. In addition, Applicants submit that claims 16, 17, 19, and 20 are independently patentable because they include limitations not taught or suggested by the cited references. Therefore, since claims 16, 17, 19, and 20 introduce additional subject matter that, particularly when considered in the context of the recitations of amended claim 15, constitutes patentable subject matter, Applicants respectfully submit that claims 16, 17, 19, and 20 are in proper condition for allowance and request that claims 16, 17, 19, and 20 may now be passed to allowance.

Independent Claim 21 has been amended to clarify the steps of the claimed method including: "cooling the hydride storage reservoir to enhance the efficiency of stored hydrogen gas transfer to the hydride storage reservoir; and opening a valve to rapidly transfer the stored hydrogen gas to the hydride storage reservoir, thereby causing the recharging of the hydride storage reservoir."

Applicant respectfully submits that Teitel (U.S. 4,211,537) in view of Appleby (U.S. 5,813,222) does not anticipate the invention recited in amended Claim 21. Teitel (U.S. 4,211,537) in view of Appleby (U.S. 5,813,222) does not anticipate cooling the hydride storage reservoir to enhance transfer efficiency, and then opening a valve to rapidly transfer stored hydrogen gas to the hydride storage reservoir. Applicant submits that the Teitel patent actually teaches away from the present invention since in Teitel there is no attempt or intention to heat the reservoir for the purpose of evacuation, cool the reservoir to enhance transfer efficiency, and then open a valve to begin the transfer of the stored hydrogen gas. In contrast, Teitel teaches heating to increase the release of hydrogen.

Applicant respectfully requests reconsideration of the rejection of Claims 7 and 10-13 under 35 U.S.C. 103(a) as being unpatentable over Teitel (U.S. 4,211,537) in view of Appleby (U.S. 5,813,222) as applied to claims 1-6, 8 and 9 above and further in view of Teitel (U.S. 4,302,217) as herein amended.

Applicant respectfully requests reconsideration of the rejection of claim 7 under 35 U.S.C. 103(a) as being unpatentable over Teitel (U.S. 4,211,537) in view of Appleby (U.S. 5,813,222) and further in view of Teitel (U.S. 4,302,217). Applicants submit that claim 7 is allowable over the cited references based on its dependency upon amended claim 1 which claim was shown to be allowable above. In addition, Applicants submit that claim 7 is independently patentable because it includes limitations not taught or suggested by the cited references. Therefore, since claim 7 introduces additional subject matter that, particularly when considered in the context of the recitations of amended claim 1, constitutes patentable subject matter, Applicants respectfully submit that claim 7 is in proper condition for allowance and request that claim 7 may now be passed to allowance.

Independent Claim 10 has been amended to clarify that the heat exchanger of the system: "in response to the coupling of the fuel cell hydride storage reservoir to the hydrogen recharging

system, the heat exchanger is adapted to: prior to transfer of the stored hydrogen gas, evacuate the fuel cell hydride storage reservoir by applying heat, and enhance the fuel cell hydride storage reservoir's ability to recharge by removing heat, during transfer of the stored hydrogen gas."

Applicant respectfully submits that Teitel (U.S. 4,211,537) in view of Appleby (U.S. 5,813,222) and further in view of Teitel (U.S. 4,302,217) does not anticipate the invention recited in amended Claim 10. Teitel (U.S. 4,211,537) in view of Appleby (U.S. 5,813,222) and further in view of Teitel (U.S. 4,302,217) does not anticipate evacuating a hydride storage reservoir by applying heat, and enhancing transfer efficiency by removing heat from the hydride storage reservoir. Applicant submits that the Teitel patent actually teaches away from the present invention since in Teitel there is no attempt or intention to heat the reservoir for the purpose of evacuation and remove heat to enhance transfer efficiency. In contrast, Teitel teaches heating to increase the release of hydrogen.

Applicant respectfully requests reconsideration of the rejection of claims 11-13 under 35 U.S.C. 103(a) as being unpatentable over Teitel (U.S. 4,211,537) in view of Appleby (U.S. 5,813,222) and further in view of Teitel (U.S. 4,302,217). Applicants submit that claims 11-13 are allowable over the cited references based on their dependency upon amended claim 10 which claim was shown to be allowable above. In addition, Applicants submit that claim 11-13 are independently patentable because it includes limitations not taught or suggested by the cited references. Therefore, since claims 11-13 introduce additional subject matter that, particularly when considered in the context of the recitations of amended claim 10, constitutes patentable subject matter, Applicants respectfully submit that claims 11-13 are in proper condition for allowance and request that claim 11-13 may now be passed to allowance.

As pointed out in Applicant's amendment dated November 17, 2003, Applicants respectfully submit that there is no suggestion nor motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine the teachings of Appleby (U.S. 5,813,222) with the teachings of Teitel (U.S. 4,211,537) or with the teachings of Teitel (US 4,302,217). Applicants further respectfully submit that the references, considered as a whole, do not suggest the desirability and thus the obviousness of making the combination.

Appleby (U.S. 5,813,222) describes a “Method and Apparatus for Heating a Catalytic Converter to Reduce Emissions.” (see title) The invention of Appleby (U.S. 5,813,222) “relates generally to the field of catalysis for the reduction of emissions from internal combustion engines.” (see col. 1, lines 8-10) The invention of Appleby (U.S. 5,813,222) provides a method and apparatus for reducing undesirable emissions from an internal combustion engine. (see col. 3, lines 52 – 54).

Teitel (U.S. 4,211,537) describes “A Hydrogen Supply Method.” (see title) The invention of Teitel (U.S. 4,211,537) describes a method for supplying hydrogen using a “combination of a metal hydride hydrogen storage and microcavity hydrogen storage.” (see col 1, lines 5-8). Teitel (U.S. 4,211,537) does not describe nor suggest the use of such a method in any way related to internal combustion engines.

Teitel (US 4,302,217) is a continuation in part of Teitel (U.S. 4,211,537). It describes a “Hydrogen Supply System.” (see title) The invention of Teitel (US 4,302,217) includes the same system as previously described herein. Teitel (US 4,302,217) does not describe nor suggest the use of such a system in any way related to internal combustion engines.

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir.2000).

Applicant therefore respectfully submits that it would not have been obvious to combine or modify the teachings of Appleby (U.S. 5,813,222) with the teachings of Teitel (U.S. 4,211,537) or with the teachings of Teitel (US 4,302,217). Therefore, Applicant respectfully submits that pending claims 1, 3, 6-17, 19-21 are allowable over the cited art.

For the foregoing reasons, applicants respectfully request that the above rejections be withdrawn.

Inasmuch as this amendment distinguishes all of the applicants' claims over the prior art references, for the many reasons indicated above, passing of this case is now believed to be in order. A Notice of Allowance is earnestly solicited.

No amendment made was related to the statutory requirements of patentability unless expressly stated herein. No amendment made was for the purpose of narrowing the scope of any claim, unless applicant has argued herein that such amendment was made to distinguish over a particular reference or combination of references.

If the Examiner believes that there are any informalities which can be corrected by Examiner's amendment, or in the event that the Examiner deems the present application non-allowable, a telephone call to the undersigned at (954) 723-6449 is respectfully solicited.

Authorization is hereby given to charge any fees, or credit overpayment necessitated by actions taken herein to Deposit Account 50-2117.

Respectfully submitted,

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